Regional Studies

ISSN: 0034-3404 (Print) 1360-0591 (Online) Journal homepage: www.tandfonline.com/journals/cres20

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To cite this article: David Comerford, José V. Rodríguez Mora & Michael J. Watts (2026) Meritocracy and inherited advantage in the United States, Regional Studies, 60:1, 2634153, DOI: 10.1080/00343404.2026.2634153

To link to this article: https://doi.org/10.1080/00343404.2026.2634153

REGIONAL STUDIES
2026, VOL. 60, NO. 1, 2634153
https://doi.org/10.1080/00343404.2026.2634153

Regional Studies Association
Routledge Taylor & Francis Group

Meritocracy and inherited advantage in the United States

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ABSTRACT

We fit a model to US regional data on income, inequality and intergenerational mobility to derive 'meritocracy' and 'advantage': high meritocracy implies local labour markets reward human capital; high advantage implies they reward class background. We then characterise how these indices correlate with observable characteristics of regions, finding intuitive results which correlate with common understanding of these terms. Finally, we show there is information in the model: our indices provide extra explanatory power for voting behaviour in the United States. We conclude that using our model to interpret the data at the regional level reveals new insights into regional characteristics.

ARTICLE HISTORY
Received 21 October 2024
Accepted 13 February 2026

KEYWORDS
Meritocracy and inherited advantage; intergenerational mobility and inequality; regional labour market dynamics

JEL
D31; J62; R23

1. Introduction

Meritocracy, as introduced by Young (1958), describes a society in which rewards are based on individual talent rather than background or 'advantage' in our terminology. While meritocracy is often championed for promoting fairness, and advantage likewise decried, Young actually introduced the term 'meritocracy' as a dystopian warning, noting that it can contribute to income inequality and hinder social mobility. This mechanism, and this outcome, is well described by Comerford et al. (2022), who show that both meritocracy and advantage cause inequality and hinder social mobility, though by different degrees and via different channels. In the present paper, we take this model to regional data in the United States, generating inferred series for each location that index its degree of meritocracy and inherited advantage. We show that using our model to interpret the data at the regional level reveals new insights into regional characteristics, and into the meaning of meritocracy itself.

Rich socio-economic data for the United States at regional and local levels now exist thanks to the work of Chetty et al. (2014a). At the level of the commuting zone, these data map well onto the model of Comerford et al. (2022) since the model describes a labour market. Therefore, in the current paper we fit the model of Comerford et al. to data on income, inequality and intergenerational mobility from Chetty et al. This model, when fit to data, produces two indices which we label as 'meritocracy' and 'inherited advantage'. Taking the model seriously means that we interpret commuting zones deemed to have a high degree of meritocracy as regions in which local labour markets accurately reward actual human capital; and commuting zones with a high degree of inherited advantage as regions in which local labour markets reward class background.

Interpreting the indices so derived as actual representations of meritocracy and inherited advantage does not mean that they actually have anything to do with a common understanding of these terms. They have been derived to best fit a model to data on income, inequality and intergenerational mobility; and so a commuting zone deemed to be meritocratic, for example, may have higher income, higher inequality and slightly higher social mobility than a commuting zone deemed to be advantageous; but how do these indices

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Supplemental data for this article can be accessed online at https://doi.org/10.1080/00343404.2026.2634153

correlate with the broad suite of locational characteristics? And would a layperson agree that a commuting zone characterised by this model calibration exercise as meritocratic fit this description, given an everyday understanding of the word?

Chetty et al.'s (2014a) data provide a rich set of such locational characteristics, and the next step in the exercise is to look at the associations of our derived meritocracy and advantage series with these data, across all these characteristics which were, crucially, not used in the derivation of these series. We find some interesting and intuitive results: more meritocratic regions tend to be urban areas with better educational and labour market opportunities, while regions with higher levels of inherited advantage are often marked by more racial segregation, single-parent households, crime and stagnant economic conditions. Our layperson would likely approve. Nevertheless, it remains the case that (almost by definition given our model) meritocratic regions are unequal, with low social mobility. This is consistent with Young (1958), but our layperson may object.

Given the congruence between how we measure meritocracy and advantage across regions, and how regional characteristics line up, we can conclude that we are measuring something real about the regions, for which our labels of meritocracy and advantage are reasonable or apt. But does this say anything beyond providing some summary of the data of Chetty et al. (2014a)? To conclude this paper, we argue it does. The characteristics that cluster around the terms 'meritocracy' and 'advantage' are suggestive of factors that influence voting patterns in the United States. Therefore, our last exercise in this paper is to see how predictive our meritocracy and advantage series have been in presidential elections.

This provides a particularly interesting result. Meritocracy and advantage have been derived using data on income, inequality and intergenerational mobility; and yet voting patterns are better explained, in terms of adjusted R^2, including meritocracy and advantage alongside income, inequality and intergenerational mobility. Therefore, it seems that the model structure itself is adding information to the data on income, inequality and intergenerational mobility in terms of these data's association with voting patterns. We conclude that using our model to interpret the data at the regional level reveals new insights into regional characteristics.

The paper is structured as follows. Section 2 discusses what we mean by the term 'meritocracy'. It introduces the theoretical model used to generate the meritocracy and advantage indices, and provides background on the relevant literature. Section 3 describes the data used in the analysis, with a focus on regional measures of income, inequality and intergenerational mobility. Section 4 details the methodology employed to calibrate the model and derive the indices. Section 5 presents the core findings, exploring how the meritocracy and advantage indices correlate with regional socio-economic characteristics and voting behaviour. Finally, Section 6 concludes by summarising the key contributions and insights gained from the analysis.

2. Background

2.1. Meritocracy

The term 'meritocracy' has been used historically to describe different concepts. This paper refers to it in its original meaning from Michael Young's *The Rise of Meritocracy* (1958). The book was a satirical critique of British society and the long-run implications of rewarding the most talented: a ruling elite which is open, in principle, with positions awarded through intelligence testing and educational achievement rather than inheritance. However, because intelligence has a heritable component, and the elite can provide its children with the best upbringing and schooling, over time the meritocratic selection process produces an entrenched caste. This ruling elite may then defend its right to rule on the basis of merit, and while merit may indeed be used to defend such a claim, it could typically only be used so if the process whereby merit was acquired were overlooked. As Young put it, 'by imperceptible degrees an aristocracy of birth has turned into an aristocracy of talent' (p. 38).

Following Young's work, focus turned in the 1970s towards equality of opportunity through the work of John Rawls and others (Rawls, 1971; Dworkin, 1981; Roemer, 2009). While a literature was established around equality of opportunity, its association with meritocracy led to the two terms becoming somewhat synonymous: merit had migrated from its original inception as a warning of a dystopian future to represent an ideal of perfect equality of opportunity.

There are two reasons why we favour Young's original definition. First, given the discourse in political philosophy around the way talent is both rewarded and acquired, it seems pragmatic to keep the two separate. Second, we are talking about the economic system as a whole. While meritocracy within a firm may, in isolation, be defensible, it is the system that generates the ability to discriminate which is of more interested. Using the United States as a test bed for understanding this version of meritocracy is particularly useful given it is not a historically class-based system, but has established mechanisms by which wealthier parents can invest more heavily in their children's human capital. This allows us to reconcile the 'American Dream' ideal, whereby anyone can make it irrespective of their background, with a reality where, in general, high inequality is coupled with high intergenerational persistence in income. While a class-based elite would be one way to achieve this combination of high inequality and immobility, we argue that the United States has also come to represent a version of Young's 'Aristocracy of talent'. We aim to establish, by mapping meritocracy, where this exists to a larger degree.

2.2. Model

The theoretical model we are fitting is explained in detail by Comerford et al. (2022), and a detailed outline is provided in Appendix A in the supplemental data online. Here we will give a non-technical, intuitive overview.

Firms in the United States are believed to want to maximise their profits and, as a result, pay workers according to their productivity. The problem they face is that they do not observe a worker's productivity. Instead, they observe two 'noisy' signals. The first relates directly to the worker's productivity (which we sometimes refer to as their talent or human capital).[1]

Firms have a rough idea about how good any worker is likely to be at their job based on their schooling, qualifications, experience, etc. But they also get a signal on an individual's background (specifically, a noisy signal of their parents' income). In the absence of perfect information on talent, firms find it helpful to know a worker's background. The primary reason for this is that the provision of public education is imperfect, so if you are from a wealthier background, you may, on average, have more talent: your parents could pay for private schooling or tuition, summer camps, museum trips and music lessons.

We can then imagine two seemingly different worlds. In one, firms have very good information about talent, and so talent is rewarded heavily. We call this 'meritocracy' because the highest paying jobs go to the most talented. Educational investment is high as parents take advantage of this mechanism – private tuition, summer camps, etc. – and this spurs high levels of inequality. Since this mechanism allows talent to be bought, at least to some extent, it leads to low levels of intergenerational mobility: rewards are allocated according to talent, but talent is in some sense allocated according to parental income. The idea that meritocracy spurs social mobility, in particular, is shown to be flawed in the presence of imperfect public provision of education, together with parents' natural preferences towards providing the best for their children.

In the other world, firms have very little direct information on talent, but good information about a worker's background. Since coming from a wealthier background is believed to afford greater educational opportunities, those children are rewarded. We call this 'inherited advantage'. Inequality is high because it is easy to tell those from different backgrounds apart, and intergenerational mobility is low because the children of the rich are selected into higher paying jobs. The key thing to note is that this end result is not so different from the meritocratic one: inequality is high and social mobility is low. There will be less educational investment – the rich only need to undertake it to maintain the general belief that they have more of it – but otherwise meritocratic worlds and those with high levels of inherited advantage look alike.

In calibrating the data, the description of these two worlds holds to a greater or lesser extent within any given area. Each US commuting zone is given a value of between 0 and 1 for meritocracy, based on how much weight firms give to the human capital signal in determining pay, and a value of between 0 and 1 for inherited advantage, based on how much weight they give to the background signal. Both these weights are conditional on the other signal; so, the model is asking in relation to meritocracy, 'In this area, how much weight do firms give to an individual's talent in determining their pay, given the available information on their background?' We let the data determine the answer for each commuting zone in the calibration below.

Note also that the correlations between education, class background and human capital are what make the signals available to firms valuable and are central to how firms price the signals. For example, firms are not interested per se on an individual's background, or even education; they are interested to the extent it correlates with their expected human capital and hence firm-specific productivity.

2.3. Related literature

In recent decades there has been increased interest in better understanding the income distribution and how features of it have varied over time, particularly in the United States or with a regional focus (Cavanaugh & Breau, 2018; Black & Devereux, 2011; Hammond & Thompson, 2002; MacLeavy & Manley, 2018). During that time, the observed positive empirical relationship between inequality and intergenerational persistence in income has come to be known as the 'Great Gatsby Curve'.

Durlauf et al. (2022) provide an overview of the many mechanisms by which the Great Gatsby Curve may be derived. The mechanism we use, outlined above, is one where there are labour market discrimination and credit constraints in the provision of education, which means that the rich are better able to 'purchase' talent for their children, and so foreseeing the high degree of sorting that their children will face in the labour market, the rich invest more heavily in their children (either directly, through private education, or indirectly, through Tiebout sorting). This also generates the result that a highly meritocratic society (one where talent is identified and rewarded) can also exhibit low intergenerational mobility. The discrimination that is central to our model happens upon entry to the labour market, and has persistent effects, but note that this could happen at college entry or other points at which students are selected based on observables that correlate with talent. For example, Hendricks et al. (2021) describe how an exogenous increase in college admissions in the post-Second World War period led to greater selectivity by colleges. In our story, such a change will both lead to greater labour market discrimination and income inequality, and be brought about endogenously by that inequality and discrimination, since they raise the returns to signals on human capital and will therefore incentivise college attendance.

This paper builds on work carried out by Comerford et al. (2022), the model from which is discussed in Section 2.2. Comerford et al. used international data from the Organisation for Economic Co-operation and Development (OECD), as well as data from Corak (2013) on intergenerational mobility, to fit the model to cross-country data. However, this cross-country fit is highly problematic: the interpretation of what the data are may vary from country to country, and the calibration procedure requires a uniform rate of total factor productivity across countries. Comerford et al. (2022) therefore labelled their numerical exercise as an 'illustration' and in no way claimed to be testing the model. In the present paper, by contrast, we use a consistent dataset across a relatively constant institutional set up, that is, within a single country, the United States, using the data from Chetty et al. (2014a). This allows us to go beyond the work of Comerford et al. (2022) and test the model, as well as gaining some sense of what seems to associate with (if not cause) meritocracy and the inheritance of advantage in the United States.

Chetty et al. (2014a, 2014b) look at the time-series and cross-sectional distribution of intergenerational mobility and inequality in the United States. In the time-series data, Chetty et al. (2014b) find that intergenerational mobility was remarkably stable in the United States in the second half of the 20th century despite increasing inequality. A partial explanation for this is that the change in inequality was concentrated amongst those at the very top of the income distribution, and this inequality at the extremes is much less closely related to intergenerational income persistence in general. Our paper follows Chetty et al. (2014a) more closely, which looks at the spatial distribution of inequality and intergenerational mobility across US commuting zones. They find significant variation in mobility across the United States, which is correlated with inequality, as per the Great Gatsby Curve, but also residential segregation, access to good schooling, social capital and family stability. We look at the extent to which meritocracy and inherited advantages are correlated with the Chetty et al.'s covariates.

Connor and Storper (2020) similarly consider correlates of a measure of upward mobility across the United States. They find that upward mobility in the late 20th century was negatively associated with income inequality, Black population share, high-school dropout rate, manufacturing employment share and urban population share, and positively associated with the foreign-born share of the population. Segovia and Ramos (2024) find similar results for regional variation in mobility in Ecuador using income inequality,

the Indigenous share of the population, years of schooling, family self-employment and migration flows. These findings are consistent with our results for inherited advantage, which is strongly correlated with intergenerational mobility, but which is derived from a model that explains the underlying mechanism. Connor and Storper (2020, p. 30315) suspect that the negative correlation between mobility and inequality is due to labour market stratification; Comerford et al. (2022) explain how such stratification, or discrimination, naturally brings it about; and the current paper tests whether the data are consistent with such a story. This story is also consistent with the intra-city stratification examined by Kane and Hipp (2019), who find that such stratification, or segregation, is correlated with greater inequality, but look specifically at the context of occupation type and share of the population in creative industries: the more polarised the blend of occupations in a region, the more segregated it is. While the model of Comerford et al. (2022) does not include a variety of occupations, it illustrates how labour market discrimination provides incentives to separate from others for the wealthy, through education or housing choices. We will see below that meritocracy and inherited advantage are strongly associated with racial segregation, and meritocracy with income segregation.

3. Data

The data used to calibrate the model are from Chetty et al. (2014a).[2] The units of observation are 1990 US commuting zones as defined by Tolbert and Sizer (1996). The data cover 709 of the 741 commuting zones.

The model has four 'global' parameters[3] and two additional parameters for each location (meritocracy and advantage). The model produces values for each location for the mean of log income, the variance of log income and the intergenerational log income correlation (or intergenerational income elasticity). In order to calibrate the model, we match these quantities to their values in the data.

Table 1 lists the covariates that Chetty et al. (2014a) used to describe the determinants of intergenerational mobility at a commuting zone level. We want to understand the association between these covariates

Table 1. Covariates used from Chetty et al. (2014a).

Category	Variables
Racial demographics	Black Share of the Population
Urban areas	Urban/Rural Indicator
Segregation	Racial Segregation*
	Income Segregation*
	Segregation of Poverty (Bottom 25%)*
	Segregation of Affluence (Top 25%)
	Fraction with Commute less than 15 Mins
Tax	Local Tax Rate*
	Local Government Expenditures per Capita*
	State Income Tax Progressivity*
	State EITC Exposure
K-12 education	School Expenditure per Student*
	Student–Teacher Ratio*
	Test Score Percentile (Income adjusted)*
	High School Dropout Rate (Income adjusted)
College education	Number of Colleges per Capita
	College Tuition
	College Graduation Rate (Income Adjusted)
Labour market	Labour Force Participation*
	Share Working in Manufacturing*
	Growth in Chinese Imports
	Teenage (14–16) Labour Force Participation
	Income Growth 2000–2006*
Migration	Migration Inflow Rate
	Migration Outflow Rate
	Fraction Foreign Born
Social capital	Social Capital Index
	Fraction Religious
	Violent Crime Rate
Family structure	Fraction of Children with Single Mothers
	Fraction of Adults Divorced
	Fraction of Adults Married

Note: Variables from each category with three or more covariates were used to predict meritocracy and inherited advantage in Figures 5 and 7. Where there were more than three variables in a category, those with asterisks were used. EITC, earned income tax credits.

and our measures of meritocracy and inherited advantage to try to characterise what regions with higher levels of meritocracy or inherited advantage look like. The covariates are grouped into 10 categories. We will also look at the predictive power of each group of covariates over the spatial distribution of merit and advantage.

We also use data on voting in presidential elections to examine the informational content of the calibrated variables. These data are provided by the MIT Election Data and Science Lab (2018) and give county-level vote counts for each presidential candidate in each election from 2000 to 2020.[4] We focus on the 2016 presidential election here as Chetty et al.'s (2014a) data used to estimate intergenerational mobility end in 2012 and we want to focus on subsequent voting behaviour. Data from the other elections are used to perform robustness checks in Appendix D in the supplemental data online. The aggregation of counties to commuting zones was carried out as described by Autor and Dorn (2013).[5]

4. Methodology

We calibrate the model by minimising the distance between the mean of log income, variance of log income, and intergenerational income elasticity between the model and the data. Specifically, we minimise two objective functions relating to the squared distance between the data and fitted values of these three moments. The first objective is to minimise the largest of these distances. That means that if the model has a good fit for the mean and variance of log income, but a poor fit for intergenerational elasticity, it focuses on improving the fit on intergenerational elasticity. The second objective is to minimise the sum of all three squared distances. When these two objective are used together, it amounts to saying: focus on improving the fit of the least well-fitted moment (objective 1), but where you can improve the fit of the other moments, do so (objective 2).[6]

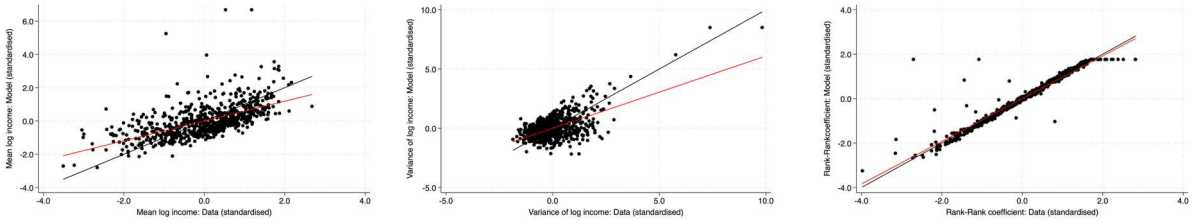
The quality of the fit between the model and data for each moment is examined in Figure 1. The figures are drawn with standardised moments so that the slope of the red fitted line represents the correlation between the fitted and data values across commuting zones. The black line represents a perfect fit (i.e., a correlation of 1). The rank–rank coefficient is fitted almost perfectly with a correlation of 0.961. The other moments are less well fitted but have correlations of 0.594 (mean of log income) and 0.610 (variance of log income) between the model and the data.

This strategy allows us to obtain fitted values for meritocracy and inherited advantage for each commuting zone (distributions of which are given in Appendix C in the supplemental data online), as well as US-wide measures of four global parameters.

5. Analysis and results

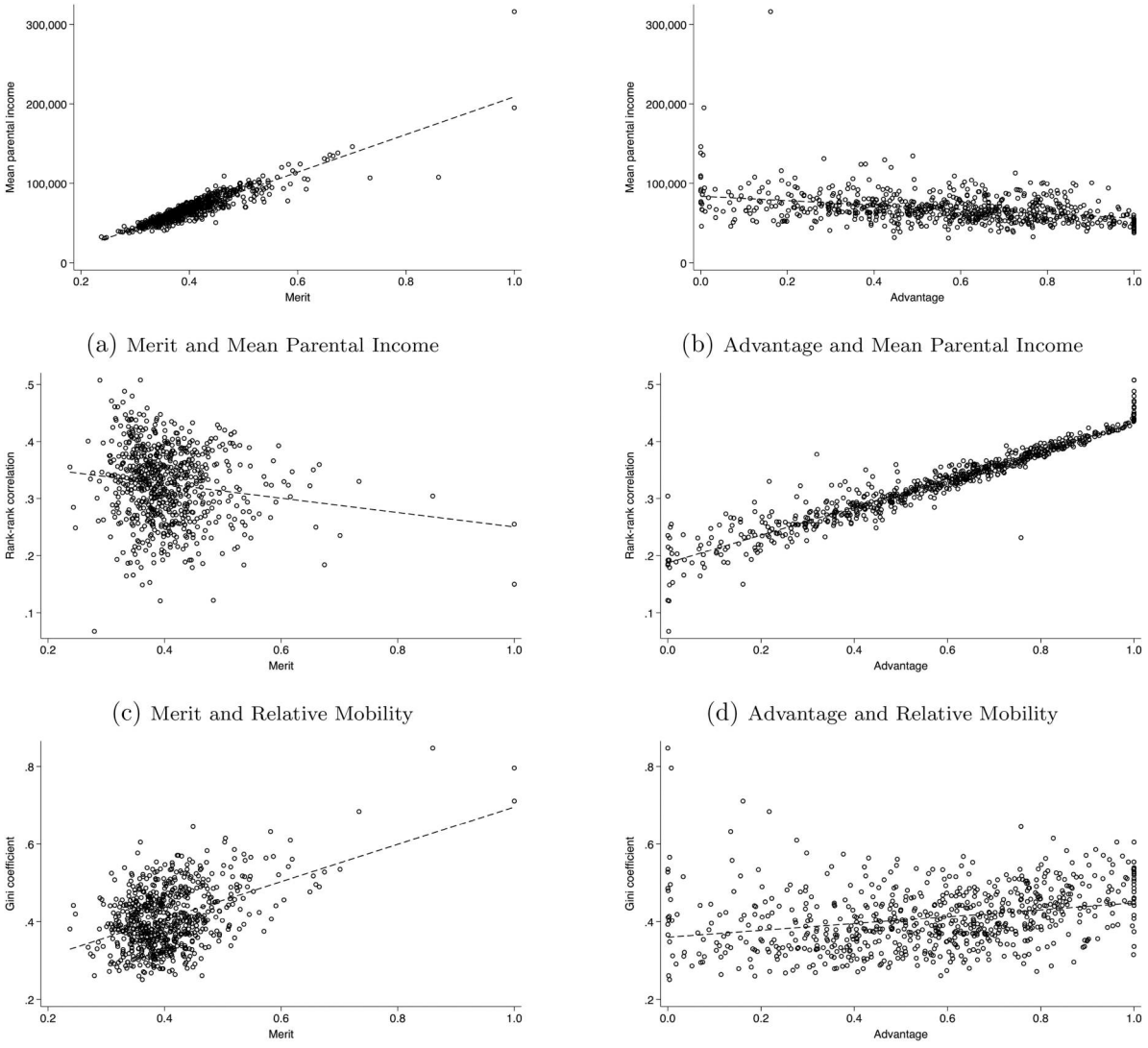
5.1. Correlation with the calibration data

We first look at how meritocracy and inherited advantage from the calibrated model vary with the data used in the calibration. Figure 2 illustrates their associations with mean parental income, the rank–rank coefficient (relative intergenerational mobility) and Gini coefficient. These represent the raw data from Chetty et al. (2014a) used to derive the targeted moments in the calibration.



(a) Mean of log income (b) Variance of log income (c) Rank-Rank coefficient

Figure 1. Targeted moments plotted against their data values.



(a) Merit and Mean Parental Income

(b) Advantage and Mean Parental Income

(c) Merit and Relative Mobility

(d) Advantage and Relative Mobility

(e) Merit and the Gini Coefficient

(f) Advantage and the Gini Coefficient

Figure 2. Association of merit and advantage with data used in the calibration.

The top row of Figure 2 shows the correlation of merit and advantage with mean parental income. Merit is positively and significantly correlated with parental income, while advantage is negatively and significantly correlated with parental income. In the case of merit, this may be understood to relate to parental investment in education (which is positively correlated with mean income): more meritocratic places incentivise educational investment, which in turn generates higher incomes. Places with higher levels of inherited advantage exhibit lower mean income for the opposite reason: when background, rather than talent, is rewarded, there is less incentive to invest in education, reducing incomes. Looking at this the other way, in areas where average parental income is high, firms are less concerned about an individual's particular background, but in areas where average parental income is low, where you come from in the income distribution matters more.

The middle row of Figure 2 shows the correlation of merit and advantage with relative mobility, given by the rank–rank coefficient for the 1980–82 cohort. A higher rank–rank coefficient represents a higher degree of intergenerational correlation, or lower mobility. The left-hand panel shows that commuting zones that exhibit more merit also have higher mobility. In the context of the model this is counter-intuitive: more merit and more discrimination there lead to greater incentives to invest in children's education which, in the presence of a credit constraint, increases the importance of parental income in determining children's

outcomes. We can see, however, that advantage is negatively correlated with intergenerational mobility: commuting zones where firms discriminate more on background offer less opportunity for a family's position in the income distribution to change from one generation to the next. Given meritocracy and advantage are themselves negatively correlated (Figure 3), this could explain the downward sloping line of best fit in Figure 2c: as merit increases, the rank–rank coefficient may increase for a given level of advantage, as predicted by the model, but this is crowded out by a decline in advantage which pulls down the rank–rank coefficient. This is confirmed in Table 2. The effect of an increase in merit, for a given level of advantage, is to increase the rank–rank correlation and reduce mobility.[7]

The bottom panels of Figure 2 show that both merit and advantage are correlated with higher inequality. Higher levels of merit and advantage imply that firms are discriminating to a larger degree and, in so doing, generate more inequality. Likewise, higher levels of inequality (in background, educational expenditure and talent) feed into greater labour market discrimination.

It is worth noting that the negative correlation between meritocracy and inherited advantage observed in Figure 3 is not guaranteed by the model. Two forces feed into this. First, there is a direct substitution: if firms know more about talent, they give less weight to the background. This creates a negative correlation between meritocracy and inherited advantage. Second, if firms reward talent more, they generate more inequality, which in turn causes them to give more weight to any information which allows them to discriminate amongst workers, including background. This creates a positive correlation between meritocracy and inherited advantage. The data allows us to see that the first of these effects is the larger, as might be expected given it represents the more direct effect of one signal on the other.

Table 2 gives the regression results from running each of the variables used to fit the model on merit and advantage. The results reported are for standardised versions of each variable, so the coefficients should be interpreted as the effect of a 1 SD (standard deviation) change.

As shown in the bivariate graphs, merit and advantage have opposite associations with mean parental income: merit is associated with significantly higher mean parental income, while advantage is associated with significantly lower mean incomes. The magnitude of the merit association is considerably larger. The rank–rank coefficient is positively and significantly associated with both merit and advantage, holding the other fixed. This implies that intergenerational mobility is lower in commuting zones with higher degrees of merit or inherited advantages. The Gini coefficient is, likewise, positively and significantly associated with both merit and advantage.

It is worth noting that the narrative of Comerford et al. (2022) is that increases in meritocracy and inherited advantage are associated with the same (detrimental) effects on inequality and intergenerational mobility. This is exactly what we have found in the data. The model allows them to have different associations with mean parental income, though, since meritocracy incentivises educational investment to a much larger degree than inherited advantage does.

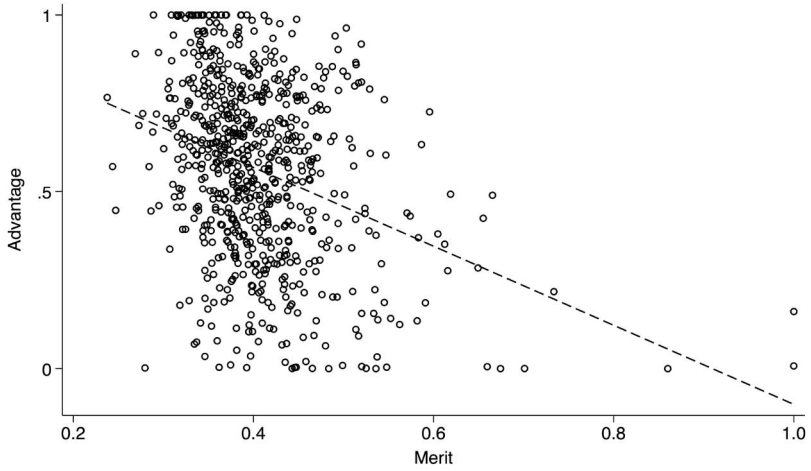


Figure 3. Fitted relationship between meritocracy and inherited advantage across commuting zones.

Table 2. Correlation of meritocracy and inherited advantage with the data used in the calibration.

	(1) Mean parent income	(2) Rank–rank coefficient	(3) Gini
Merit	0.888***	0.193***	0.618***
	(0.0762)	(0.00928)	(0.0304)
Advantage	−0.0619***	1.020***	0.488***
	(0.0329)	(0.00928)	(0.0304)
Observations	709	709	709
Adjusted R^2	0.828	0.946	0.418

Note: Standard errors are shown in parentheses. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

The magnitudes of the effects are comparable given that each variable is standardised. For example, the association between inherited advantage and intergenerational mobility is shown in Table 2, column (2), to be much stronger than the association between meritocracy and mobility. This is interesting in the context of America as the 'Land of Opportunity'. Comerford et al. (2022) note a theoretical mechanism which would imply that America may be the land of opportunity, but only for the sufficiently rich: labour markets rewarded the most talented, but talent was bought by parental income. Table 2, column (2), implies that while that mechanism exists, the association with intergenerational mobility is much stronger from advantage: the children of the rich stay rich primarily because the labour markets rewards signals on parental income. It suggests that commuting zones with low mobility in the United States are that way through an aristocratic mechanism whereby labour markets directly favour the children of the rich (i.e., middle-class children obtain good jobs irrespective of talent).

Looking, at Table 2, column (3), a 1 SD increase in either merit or advantage is associated with roughly the same increase in the Gini coefficient. Meritocracy is therefore comparatively more strongly associated with inequality, while inherited advantages are more strongly associated with intergenerational mobility.

5.2. Covariates

Figure 4 shows the pairwise correlations of each covariate with meritocracy and their 95% confidence intervals. The signs next to each variable name indicate the direction of the correlation. The top three correlates all show that meritocracy is strongly associated with more segregation. This is consistent with the model's story, where meritocracy is fuelled by discrimination and richer parents use the education system to their children's advantage. This includes Tiebout sorting, where local taxes in areas with higher housing costs fund higher quality schools, so we would expect to see income-related segregation when meritocracy is higher.

Meritocracy is also strongly correlated with variables relating to urban areas (both urban areas themselves, and those with longer commutes), the migrant population and migration flows, and labour force participation. These combine to create an image of a churning population where people move in and out of urban areas to take advantage of job opportunities. We would expect large and fluid labour markets to be characterised by a high degree of discrimination amongst firms – they have better options when hiring – and this discrimination is positively related to meritocracy.

We also see a significant positive correlation of meritocracy with the teacher–student ratio, school expenditure per student and college tuition (though it is related to a smaller number of colleges per capita). Meritocracy in our model implies firms discriminate to a larger extent for talent, so parents invest more heavily in the education of their children. We would expect this to lead to a demand for more public expenditure on schools and teachers, and colleges charging higher fees in response to that demand (though we would also expect to see more colleges, or at least college places).

Figure 5 confirms the key messages from Figure 4, examining the correlation between the meritocracy value from the fitted model with a prediction of the same value from subsets of covariates. Each subset contains three covariates grouped thematically (Table 1). For example, the segregation line uses three covariates related to segregation – racial segregation, income segregation and segregation of poverty – to estimate a predicted value of meritocracy for each commuting zone, then plots the correlation of this with the fitted values of meritocracy. This amounts to asking: how well do covariates related to segregation predict meritocracy in a commuting zone?

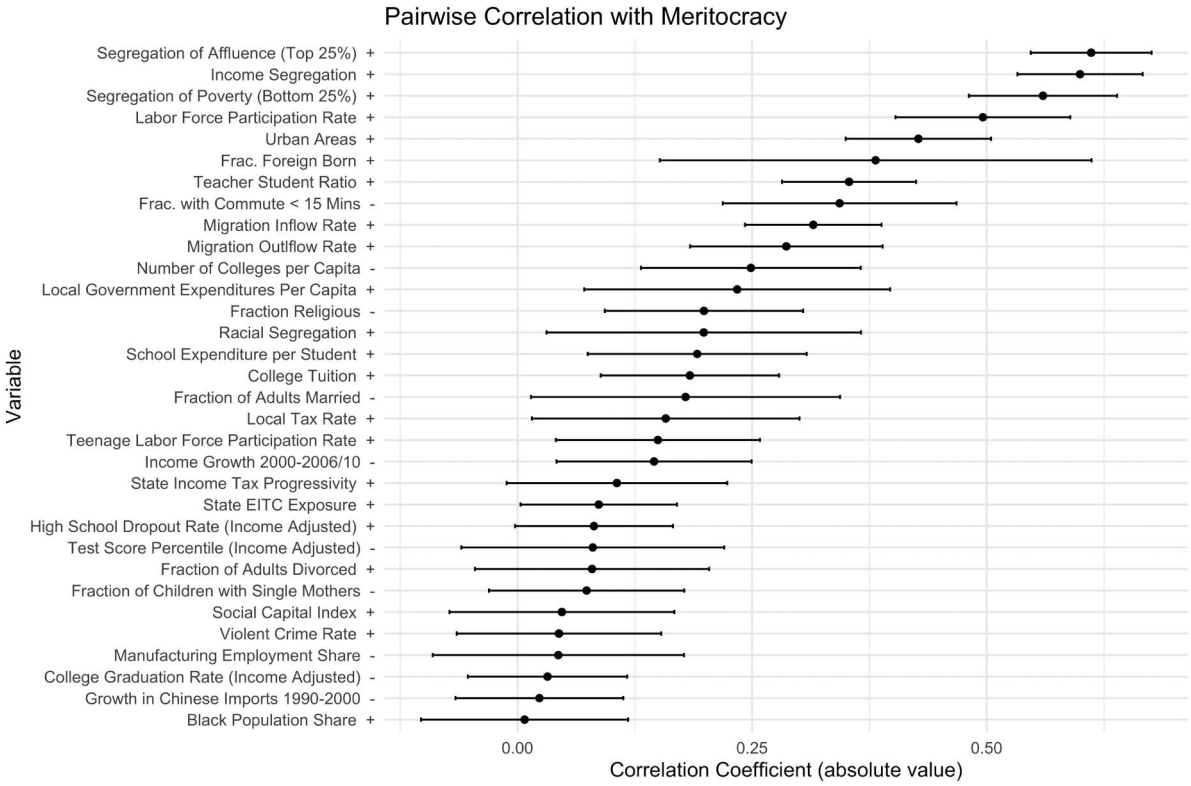


Figure 4. Pairwise correlation of meritocracy with covariates from US commuting zones and their 95% confidence intervals.
Note: Standard errors are clustered at a state level. Signs indicate whether the correlations are positive or negative.

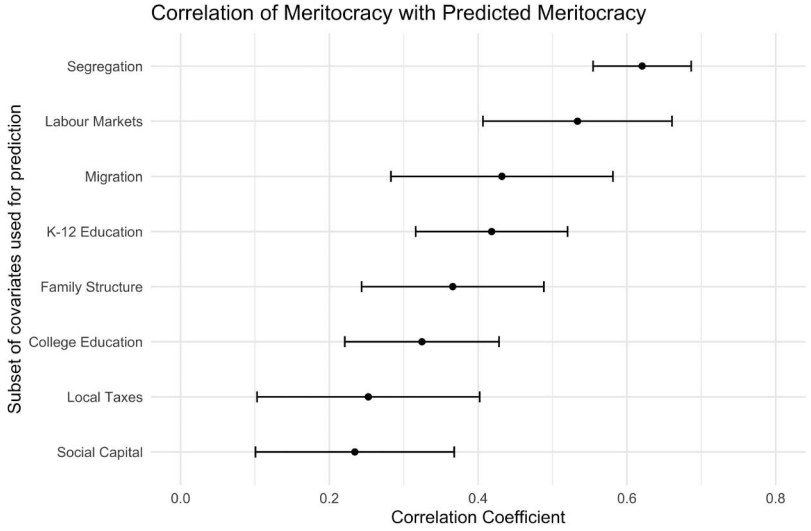


Figure 5. Pairwise correlation of meritocracy with predicted meritocracy and their 95% confidence intervals.
Note: Each prediction is made from three variables grouped thematically. The correlation gives an indication of the extent to which that theme is associated with meritocracy. The predictions were from beta regressions with standard errors clustered at a state level.

The answer is very well, at least in relative terms, with a correlation > 0.6 between the fitted value of merit and its prediction, and a narrow confidence interval. The next best predictors of the level of meritocracy in a commuting zone relate to labour markets and migration, followed by K-12 education. This is all consistent with the model's story where the incentives and ability to discriminate in labour markets drive demand for education.

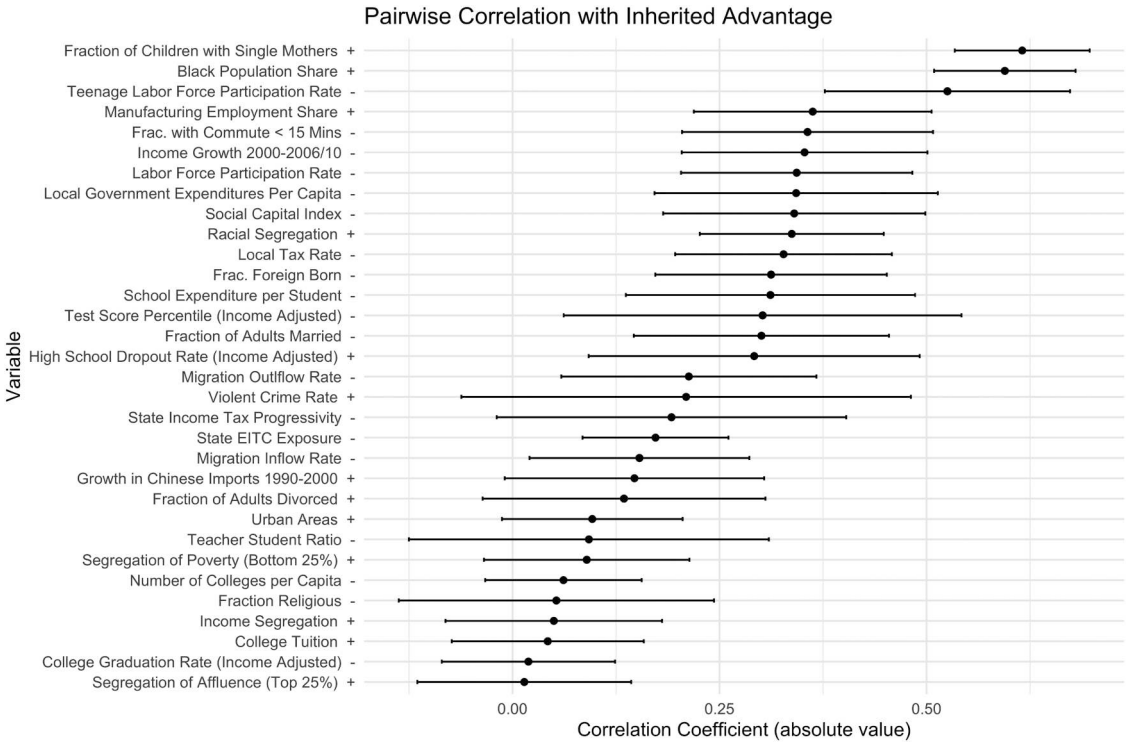


Figure 6. Equivalent of Figure 4 for inherited advantage.

We repeated the same exercises for the fitted values of inherited advantage in Figures 6 and 7. The top pairwise correlates were the fraction of children with single mothers, the share of the population which is Black and teenage labour force participation (14–16 years). Several other variables relate to economic or labour markets conditions which featured highly, including the manufacturing employment share, income growth and labour force participation of the over 16s; places that had seen slower income growth, lower levels of labour force participation and higher shares in manufacturing tended to have higher levels of inherited advantage. This is in contrast to the dynamic, urban labour markets where meritocracy was most prevalent. In fact, many of these variables were amongst the least strongly correlated with meritocracy (with the exception of labour force participation).

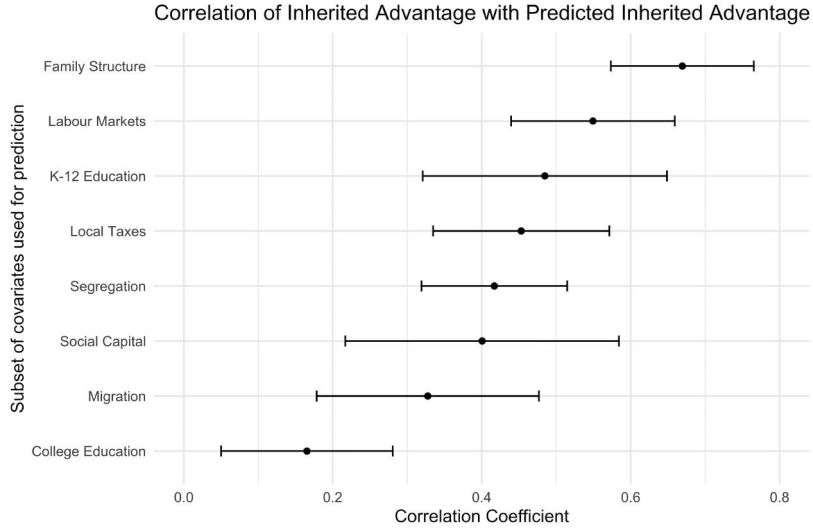


Figure 7. Equivalent of Figure 5 for inherited advantage.

In terms of the themed subsets of variables in Figure 7, family structure variables are the best at predicting inherited advantage. Single motherhood and divorce are positively and significantly correlated with inherited advantage, conditional on the other variables; marriage is negatively and significantly correlated with inherited advantage, conditional on the others. Therefore, areas with low rates of marriage, and high rates of divorce and single motherhood, exhibit high levels of inherited advantage. This implies that firms find it easiest to judge the background of an individual in such areas, and use it as a factor in their hiring (or compensation) decisions.

Labour market factors are important, as they were with predicting meritocracy. Both meritocracy and inherited advantage are associated with lower income growth. However, meritocracy is associated with higher labour force participation and a lower share of manufacturing employment (though the latter is insignificant), while inherited advantage is associated with lower labour force participation and a higher share of manufacturing employment. This might imply that inherited advantage (or disadvantage) is more strongly associated with structural unemployment brought about by the loss of manufacturing jobs in the Eastern United States.

5.3. Regression analysis

Table 3 shows the results from regressing merit and advantage on the full range of covariates from Table 1.[8] The education variables provide our (informal) *test* of the model, while the other variables allow us to describe how our meritocracy and advantage series correlate with other observables.

Amongst the education variables, it is notable that school expenditure per student is higher in more meritocratic areas, while expenditure and student–teacher ratios are significantly lower in areas with higher advantage. This is the key test of the model: meritocracy creates greater incentives to invest in education as a means to generate higher income for your children; in areas where background matters more, parents generate advantages (or disadvantages) for their children outside of the education system, so spending should be lower. And despite our model being calibrated on income, inequality and intergenerational mobility, rather than anything to do with education spending, this is exactly what we see.

We can see that the magnitude of the association with merit is greatest for income segregation and the Black share of the population (positively), and fraction of the population with commutes under 15 min and fraction of children with single mothers (negatively).[9] Unlike merit, inherited advantage has no significant association with income segregation, but has a relatively large and significant positive association with racial segregation. It is also strongly associated with the fraction of children with single mothers (positively), and with the teenage labour force participation rate, teacher–student ratio and fraction of the population which is foreign born (negatively). In Table 3, columns (2) and (4), we iteratively removed the variable with the highest p-value until only those with $p < 0.05$ remained. These provide more parsimonious models.

Several variables have significant effects in opposite directions across merit and advantage: racial segregation and the fraction of children with single mothers are associated with higher levels of inherited advantage in a commuting zone, but lower levels of meritocracy; teenage labour force participation, the fraction of the population which is foreign born and the teacher–student ratio are all associated with higher levels of meritocracy, but lower levels of inherited advantage. In fact the only variable that has a significant association in the same direction for both meritocracy and inherited advantage is the Black population share; in all other cases the associations are in opposite directions.

Meritocratic areas seem to be more diverse, in the sense of having a larger Black and foreign-born share of the population and less racial segregation; areas with more inherited advantage have a significantly lower foreign-born population and more racial segregation. The fact that a more ethnically diverse, immigrant population may be drawn to, or perpetuate, meritocracy is consistent with the ideal of the 'American Dream', albeit the belief that success can be achieved through application rather than background fails to be borne out. It would also seem to be consistent with Piketty's (1995) conception of the 'self-made man'.

Violent crime is shown to be positively correlated with inherited advantage. Kelly (2000) provided empirical evidence for Robert Merton's theories on social structure which became known as 'Strain Theory' (Merton, 1938). This posits that violent crime is more prevalent when the means of achieving success (in our case, income) are not perceived as equally, or fairly, distributed. Inherited advantage implies that

Table 3. Regressions of meritocracy and inherited advantage on commuting zone characteristics.

	(1) Merit	(2) Merit	(3) Advantage	(4) Advantage
Black Population Share	0.333***	0.194***	0.0582	0.103**
	(0.0856)	(0.0476)	(0.0553)	(0.0453)
Urban Areas	−0.0465		−0.0122	
	(0.0297)		(0.0235)	
Racial Segregation	−0.0769***	−0.102***	0.232***	0.228***
	(0.0244)	(0.0306)	(0.0430)	(0.0361)
Income Segregation	0.837**	0.367***	0.0863	
	(0.343)	(0.0578)	(0.550)	
Segregation of Poverty (Bottom 25%)	−0.355		0.000501	
	(0.243)		(0.275)	
Segregation of Affluence (Top 25%)	−0.124		−0.160	
	(0.212)		(0.297)	
Fraction with Commute less than 15 Mins	−0.259***	−0.320***	−0.106*	
	(0.0769)	(0.0555)	(0.0584)	
Local Tax Rate	−0.00479		0.00666	
	(0.0510)		(0.0454)	
Local Government Expenditures per Capita	0.0676*		−0.0686*	−0.0890**
	(0.0353)		(0.0365)	(0.0427)
State Income Tax Progressivity	−0.0000121		−0.0909**	
	(0.0360)		(0.0354)	
State EITC Exposure	−0.0666**	−0.0823**	0.000270	
	(0.0267)	(0.0338)	(0.0272)	
School Expenditure per Student	0.128***	0.132***	−0.0719*	
	(0.0451)	(0.0323)	(0.0409)	
Student–Teacher Ratio	0.0737	0.131***	−0.208***	−0.207***
	(0.0465)	(0.0303)	(0.0309)	(0.0365)
Test Score Percentile (Income Adjusted)	−0.109		−0.0205	
	(0.0890)		(0.0489)	
High School Dropout Rate (Income Adjusted)	0.0570		−0.0224	
	(0.0424)		(0.0394)	
Number of Colleges per Capita	−0.0272		0.0169	
	(0.0266)		(0.0366)	
College Tuition	0.0488*		0.0185	
	(0.0271)		(0.0241)	
College Graduation Rate (Income Adjusted)	−0.0446		0.0392	
	(0.0283)		(0.0294)	
Labor Force Participation Rate	0.103	0.144**	0.0123	
	(0.0798)	(0.0668)	(0.0496)	
Manufacturing Employment Share	−0.0781		0.158***	0.159***
	(0.0559)		(0.0469)	(0.0370)
Growth in Chinese Imports 1990–2000	0.0488*		−0.0319*	
	(0.0269)		(0.0185)	
Teenage Labor Force Participation Rate	0.216***	0.251***	−0.213***	−0.209***
	(0.0692)	(0.0663)	(0.0569)	(0.0358)
Income Growth 2000–2006/2010	−0.0461		−0.0739*	−0.110**
	(0.0478)		(0.0440)	(0.0429)
Migration Inflow Rate	0.0529		0.00549	
	(0.0690)		(0.0573)	
Migration Outflow Rate	−0.0325		−0.0640	−0.0734***
	(0.0782)		(0.0487)	(0.0263)
Fraction Foreign Born	0.163**	0.192***	−0.205***	−0.236***
	(0.0808)	(0.0609)	(0.0541)	(0.0435)
Social Capital Index	0.218*	0.153**	0.0432	
	(0.110)	(0.0677)	(0.0698)	
Fraction Religious	−0.0182		0.0466	
	(0.0493)		(0.0422)	
Violent Crime Rate	−0.0136		0.177***	0.109***
	(0.0540)		(0.0471)	(0.0318)
Fraction of Children with Single Mothers	−0.440***	−0.150**	0.371***	0.323***
	(0.104)	(0.0727)	(0.0839)	(0.0560)
Fraction of Adults Divorced	0.0915		−0.00632	
	(0.0779)		(0.0566)	
Fraction of Adults Married	−0.0957		0.110**	0.101**
	(0.0626)		(0.0432)	(0.0448)
Observations	709	709	709	709
Adjusted R^2	0.593	0.572	0.675	0.671

Note: Standard errors, clustered at state level, are shown in parentheses. All variables are standardised to have a mean of 0 and SD (standard deviation) of 1. Where an observation of a particular variable is missing from the dataset, this was coded as 0. A missing indicator was added allowing for an aggregate shift away from 0 for those commuting zones with missing observations. This prevented dropping many commuting zones for which we did not have full information, and is consistent with Chetty et al. (2014a). *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$. EITC, earned income tax credits.

those with richer parents have advantages in the labour market, not through the indirect (and less obviously unfair) channel of providing a means to a better education, but directly by rewarding those from more prosperous backgrounds. The positive and significant correlation of violent crime with inherited advantage is thus consistent with Merton's mechanism.

In summary, although meritocracy and inherited advantage are theoretically fed by the same macroeconomic factors (high inequality and labour market discrimination; low social mobility), how they get there is very different. Meritocratic areas are predominantly urban and have high social capital, dynamic labour forces, and high levels of competition that attract talented migrants and encourage educational investment. Firms have a high incentive, and ability, to choose amongst workers according to talent, fuelling high levels of inequality (and income segregation). The rich buy advantages for their children through educational investment in much the same way as advantages are inherited in a class-based system.

Areas with high levels of inherited advantage are, conversely, racial segregated with high levels of single motherhood and violent crime, stagnating manufacturing-based economies, and relatively few teachers. Amongst the more socially and economically disadvantaged, those disadvantages are passed directly from one generation to the next, perpetuating large gaps between the rich and the poor and limiting intergenerational mobility.

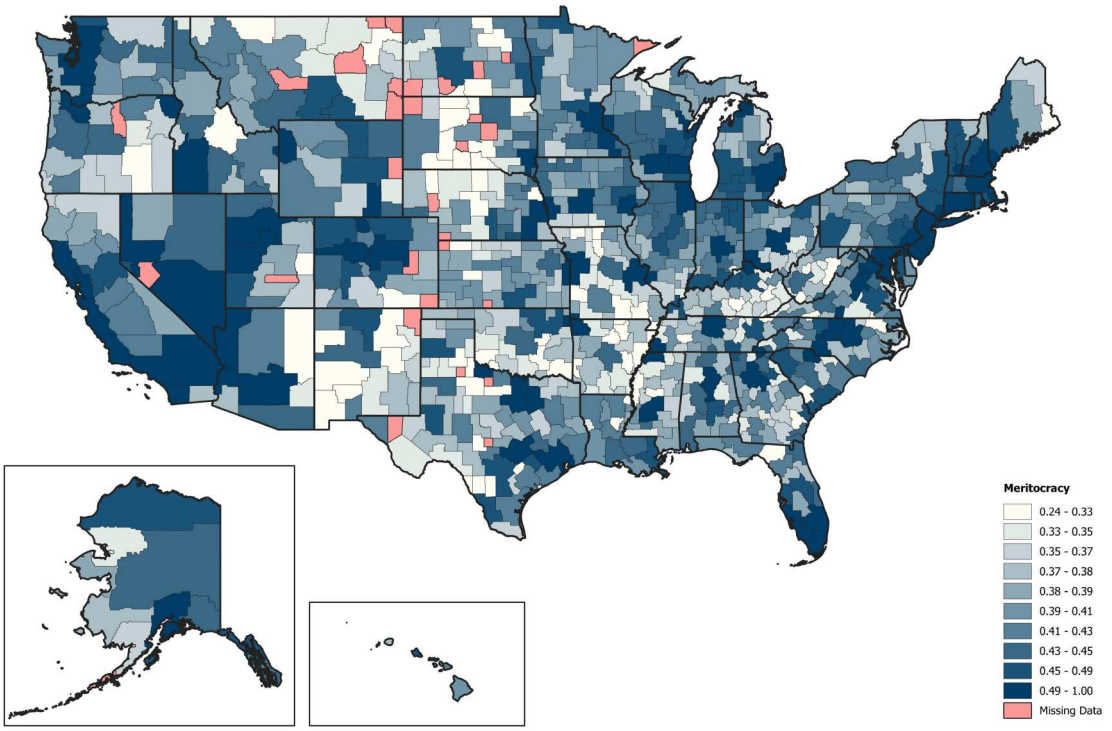
5.4. Mapping meritocracy and inherited advantage

Figure 8a shows the distribution of meritocracy across US commuting zones based on the calibrated model from Section 4. Generally, meritocracy is more common on the coasts and around the Great Lakes, specifically in the northern and southern portions of both the Pacific and Atlantic coastlines, in southern Texas and Louisiana, and throughout the Mid-West. The areas to the south of the Appalachians, around the Rocky Mountains, and on the Western Plateau, are all more meritocratic. By contrast, the Great Plains and much of the South, particularly away from the coastline and the Appalachians, have lower levels of meritocracy. This is consistent with the above story where meritocracy is associated with more populous urban areas with larger migrant populations.

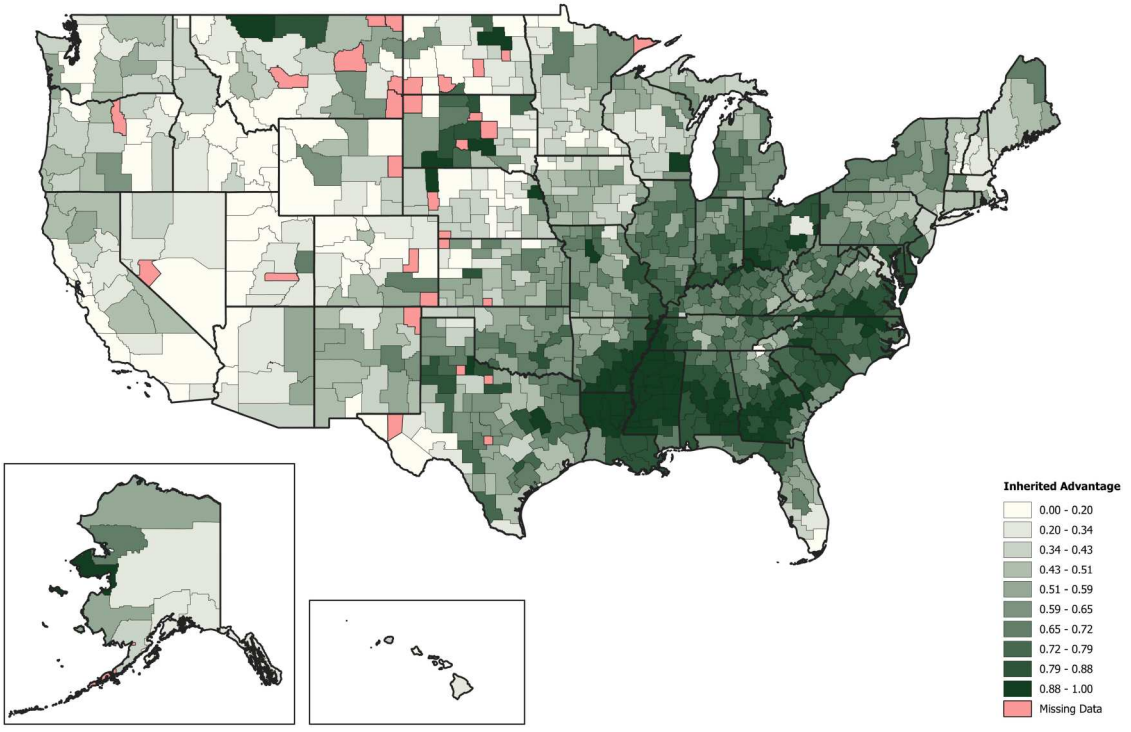
While Figure 8a outlines broad patterns in the spatial distribution of meritocracy, Table 4 provides more detail on the extremes of the distribution by providing the merit values for the highest and lowest 20 commuting zones. At the top of the distribution are Jackson, Wyoming, and Friday Harbor, Washington, where human capital is essentially perfectly observable. Many of the most meritocratic commuting zones in the United States contain major urban centres. As we have seen above, this is not a direct result of being urban, but a result of the segregation, high labour force participation, and large Black and foreign-born populations which urban areas represent. Of particular note in relation to incoming foreign migrants is the fact that two cities in California, three in Texas and two in Florida all make the 20 most meritocratic places in the United States.

Texas appears to be the most diverse US state in terms of meritocracy, at least within the tails of the distribution. While major urban centres in Dallas, Austin and Houston are among the most meritocratic places, smaller and more rural areas in Crystal City, Eagle Pass, Childress, Pearsall and Junction are all in the bottom 20. Here the labour market dynamism, segregation and competition which drives meritocracy is lacking. Other commuting zones in the bottom 20 share this more rural characteristic, centred around relatively small cities. Along with Texas, South Dakota also has five commuting zones in the 20 least meritocratic.

Figure 8b shows the distribution of inherited advantage across the United States based on the calibrated model. Advantages are much more concentrated geographically than meritocracy was: inherited advantages are strongest in the south-eastern United States, south of the Appalachians and throughout Mississippi and Louisiana. To the north-west of that, from northern Texas and New Mexico, through the southern Mid-West and into New England, is a band with intermediate levels of inherited advantage (including the Rust Belt). Generally, the western states and north-western Mid-West exhibit low levels of inherited advantage.[10] This is also consistent with the above story: the areas with the greatest inherited advantage were historically more racially segregated areas with larger manufacturing sectors.



(a) Meritocracy



(b) Inherited Advantage

Figure 8. Distribution of meritocracy and inherited advantage across US commuting zones.

Note: There are roughly 70 commuting zones in each decile, with lighter colours representing commuting zones with lower levels of meritocracy, and darker colours representing those with higher levels of meritocracy.

Table 4. Commuting zones with the highest and lowest meritocracy indices.

Highest 20 commuting zones				Lowest 20 commuting zones			
Code	Commuting zone	State	Merit	Code	Commuting zone	State	Merit
36303	Jackson	WY	1.000	27003	Ainsworth	NE	0.307
39301	Friday Harbor	WA	1.000	26105	Polk	MO	0.307
1204	Andrews	NC	0.860	301	Middlesborough	TN	0.307
19400	New York	NY	0.734	26604	Mobridge	SD	0.305
37500	San Jose	CA	0.701	32303	Junction	TX	0.303
28702	Glenwood Springs	CO	0.674	34002	Idabel	OK	0.300
20901	Bridgeport	CT	0.665	31502	Pearsall	TX	0.295
37800	San Francisco	CA	0.660	32502	Childress	TX	0.295
19600	Newark	NJ	0.655	26603	East Corson UT	SD	0.292
20500	Boston	MA	0.649	3902	Lake Providence	LA	0.289
33100	Dallas	TX	0.619	30702	Santa Rosa	NM	0.288
7100	Port St. Lucie	FL	0.616	30603	Truth or Consequences	NM	0.286
31201	Austin	TX	0.612	26406	Wolf Point	MT	0.284
11304	Washington DC	DC	0.605	26203	Linton	ND	0.280
24300	Chicago	IL	0.596	33603	Frederick	OK	0.277
28900	Denver	CO	0.591	27602	Eagle Butte	SD	0.273
9100	Atlanta	GA	0.587	27704	Gordon	SD	0.269
19500	Toms River	NJ	0.583	32306	Eagle Pass	TX	0.247
7000	Miami	FL	0.582	31501	Crystal City	TX	0.244
32000	Houston	TX	0.574	27605	Mission	SD	0.238

5.5. Voting behaviour

A crucial question is whether our derived indices of meritocracy and inherited advantage provide novel insights or merely restate information already contained in data on income, inequality and mobility. We test whether our model adds value to the data, it is calibrated by evaluating the explanatory power of our calibrated indices on an outcome not directly considered in their derivation: regional voting behaviour in US presidential elections.

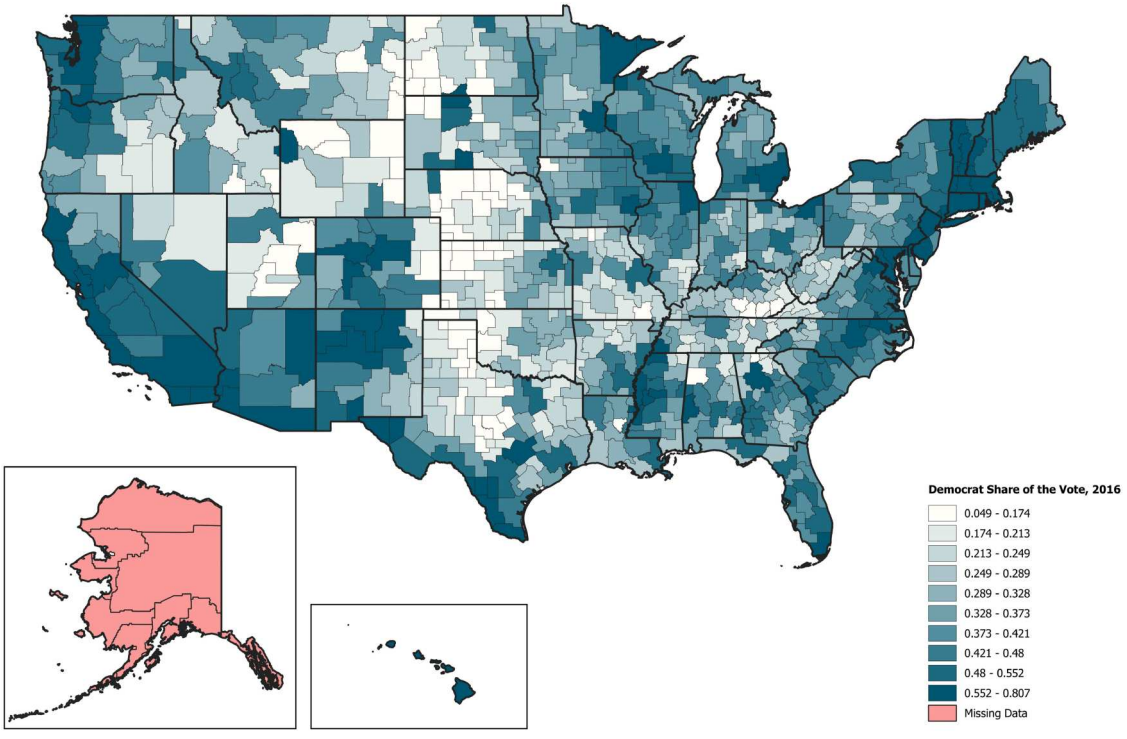


Figure 9. Share of the Democrat/Republican vote going to the Democratic Party candidate in the 2016 Presidential Election.

Note: Alaska does not report votes by county so it was not possible to aggregate its voter share to the commuting zone level. For consistency with previous maps, commuting zones are split into deciles.

Table 5. Regressions on the Democratic Party share of the vote in the 2016 presidential election.

	(1) Democratic, 2016	(2) Democratic, 2016	(3) Democratic, 2016
Mean Parent Income	0.327***		0.643*
	(0.0886)		(0.368)
Rank–Rank Coefficient	0.0506		0.775**
	(0.0943)		(0.336)
Gini	0.326***		0.513***
	(0.0688)		(0.173)
Merit		0.489***	−0.549
		(0.0750)	(0.413)
Advantage		0.157*	−0.845**
		(0.0909)	(0.323)
Observations	697	697	697
Adjusted R^2	0.253	0.213	0.277

We hypothesise that regional differences in how labour markets reward human capital versus class background, as represented by our meritocracy and inherited advantage indices, may influence political attitudes, particularly towards redistribution and economic fairness. If our measures truly capture distinctive regional characteristics beyond income and mobility alone, they should provide additional predictive power for political outcomes. To test this hypothesis, we assess how well our calibrated indices explain the variation in support for the Democratic Party in the 2016 presidential election, relative to a baseline model using only income, inequality and intergenerational mobility data. The voting data are shown in Figure 9. A comparison with Figure 8a–b suggests that the spatial pattern of presidential voting is correlated with meritocracy, but not with advantage (the correlation coefficients are 0.49 and −0.02, respectively).

We first determine whether the calibrated variables can match the explanatory power of the targeted variables from which they are derived. We then investigate whether, conditional on the targeted variables, the calibrated ones have any additional explanatory power. As with the main models, we are not claiming that their effects are causal. We find that the calibrated variables, merit and advantage, have only slightly less explanatory power than the targeted ones, and that they are sometimes significant, even conditional, on the data from which they are derived. Specifically, inherited advantage is significantly correlated with voting, even conditional on mean income, intergenerational mobility and inequality. Table 5 summarises the results.

In Table 5, column (1), we regress the Democratic share of the vote on the three data variables which were targeted in the calibration. Mean income and the Gini coefficient are positively associated with the Democrat vote, while there is no association between intergenerational mobility and the Democrat vote. In column (2), we can see that the two calibrated variables, merit and advantage, explain slightly less of the variation in the Democrat vote than the raw data, with an adjusted R^2 of 0.213 relative to 0.253. Column (3) examines the extent to which merit and advantage are associated with the Democrat vote conditional on the raw data variables. We find that inherited advantage is significantly associated with voting behaviour: areas with more inherited advantage are associated with a larger Republican vote. The adjusted R^2 has increased to 0.277, providing further evidence that the calibrated variables add information over and above that contained in the raw data.

Column (2) is effectively an additional column in Table 2. Meritocracy and inherited advantage are correlated in the same way with voting behaviour; both lead to a larger share of the Democrat vote. With regards to meritocracy this might at first seem odd: Bénabou and Ok (2001), Alesina and La Ferrara (2005) and others describe how we should expect more left-wing voting where people's prospect of upward mobility is weaker. But of course, that is one of the core points of the model. Under meritocracy, people's prospect of upward mobility *is* weaker. Employers reward talent, but it is the children of the rich who are provided with it. Meritocracy is not a levelling of the playing field and we see more meritocratic commuting zones voting for the more left-wing party in the same way as we see those with more inherited advantage doing so.

A comparison of Table 5, columns (1) and (3), suggests that two distinct mechanisms are linked to low intergenerational mobility, pushing voting behaviour in opposite directions. In column (1), the rank–rank coefficient is only weakly and insignificantly correlated with voting. However, in column (3), once merit and

advantage are included in the regression, intergenerational mobility is significantly associated with the Democratic vote, while inherited advantage is significantly associated with the Republican vote. The former is consistent with the prospect of upward mobility hypothesis: when mobility is low because opportunity is limited, voters in these areas tend to support the Democrats. However, when low mobility reflects inherited advantage, the association reverses, with stronger Republican support. This pattern is consistent with a form of 'classism' in which inherited status is viewed as either informationally efficient or intrinsically valuable and aligns with our finding that areas with more inherited advantage also favour lower government spending.

Appendix D in the supplemental data online examines the extent to which these results hold up when looking at other presidential elections from 2000 to 2012 and 2020. Generally, the results are very similar when looking across elections. One thing worth noting is that merit always enters negatively in column (3), significantly so in earlier elections. This is akin to the 'self-made man' equilibrium in Piketty (1995): people vote to allow the talented to keep their high incomes, but only conditional on access to moving up the income distribution.

5.6. Robustness

Appendix E in the supplemental data online repeats the above analysis using data at a county level. The main results from the paper are generally confirmed, though the regression results allow for some further analysis as the set of covariates is slightly different. We find there that meritocracy is particularly associated with densely populated areas with little urban sprawl, integration and access to affordable housing for the poor, but segregation for the most affluent. While meritocracy continues to be characterised by highly competitive labour markets and greater socio-political engagement, it is also associated with higher levels of crime.

The results of inherited advantage are extremely consistent with those above. We find that counties with a larger Black share of the population, higher poverty rate and less affordable housing for the poor are associated with higher inherited (dis)advantage. This is consistent with research on red-lining and racial discrimination in the provision of housing. Counties with higher levels of inherited advantage are also typically more blue collar, have higher levels of crime, and have poorer schooling and labour market outcomes for young people.

6. Conclusions

In this paper, we have developed and applied a model that generates two indices – meritocracy and advantage – to analyse local labour markets across the United States. These indices, derived from regional data on income, inequality and intergenerational mobility, allow us to interpret how different regions reward either individual talent or class background. Taking the model seriously, we interpret high meritocracy as indicating regions where labour markets effectively reward human capital, while high advantage signifies regions where labour markets disproportionately reward class background.

Consistently with our modelling framework, commuting zones identified as meritocratic tend to be associated with higher incomes, and greater inequality, while regions with high advantage see high inequality and low social mobility. A crucial question, however, is whether our model-derived indices align with intuitive, everyday understandings of meritocracy and advantage. To address this, we examined the correlation between our indices and a wide range of regional characteristics not used in deriving them. The results support the validity of our indices: more meritocratic regions tend to be urban areas with better educational and labour market opportunities, while regions with higher advantage often show more racial segregation, higher rates of single-parent households, crime and stagnating economic conditions.

Given the consistency between our derived indices and observable regional characteristics, we conclude that the labels of meritocracy and advantage accurately describe real socio-economic phenomena in these regions. However, our analysis extends beyond merely summarising the data from Chetty et al. (2014a). The meritocracy and advantage indices offer new explanatory power, exemplified in our exercise examining voting patterns in US presidential elections. Including our meritocracy and advantage indices improves the explanation of voting behaviour in presidential elections beyond what can be explained by income, inequality and intergenerational mobility alone. This finding suggests that the model structure itself adds valuable

information to our understanding of regional socio-economic dynamics and their influence on voting behaviour. Thus, using our model to interpret the data at the regional level has revealed new and meaningful insights into the characteristics that define these regions.

Notes

1. 'Productivity' or 'human capital' was chosen as a term to capture both innate ability and acquired ability (via formal and informal education). We chose this term partly to emphasise that we are agnostic about the nature–nurture debate in this paper – human capital serves as an umbrella term for ability stemming from either source. Human capital was also chosen because it is commonly thought of in the context of firm-specific human capital, that is, the extent to which human capital maps to productivity within the firm. We think of it in these terms and therefore that the mapping from what is observable before hiring a worker (years of education, college which they attended, etc.), and their firm-specific productivity, is imperfect, though the model by no means requires this. If firms can perfectly observe human capital, then meritocracy tends to 1.
2. Also, for descriptive statistics by county and commuting zone, see http://equality-of-opportunity.org/index.php/data/. For the mean of log income, we used the log of median income from Table A7 in the supplemental data online under the assumption than income is log-normal. The variance of log income was calculated from the variation between the mean and median incomes, again under the assumption of log-normality, while the intergenerational income elasticity was given by the rank–rank slope in Table A5 online. While the intergenerational income elasticity and rank–rank slope are conceptually different, under the assumptions made in Appendix B online we derive a mapping that is almost one-to-one between the two. Given this, we use the rank–rank slope in the calibration.
3. Representing the elasticity of human capital with respect to parental investment, the variance of the intrinsic human capital process (i.e., before any parental investment), the intergenerational discount rate and a parameter related to total factor productivity.
4. For the data, see https://dataverse.harvard.edu/dataset.xhtml?persistentId= doi:10.7910/DVN/VOQCHQ/.
5. We are grateful to David Dorn who made the code available for mapping between US countries and 1990 commuting zones; see file [E7] at https://www.ddorn.net/data.htm1; file [E10] provides updates to the county mapping for more recent censuses.
6. We fit the model in Julia using the 'BlackBoxOptim' module and the Borg MOEA method. Borg MOEA allows multiple objective functions to be specified and returns a Pareto frontier along which neither objective can be improved without having a detrimental effect on the other. We fit the Pareto frontier using objective 2, but then choose the point on the frontier that best satisfies objective 1. The data on the three moments were standardised by subtracting the mean and dividing by the standard deviation (SD) before implementation. This ensured that they were all the same scale, so that the squared errors could be compared.
7. There are two things worthy of note about Figure 3. First, that the negative correlation is not driven by the small number of outliers where merit is particularly high and advantage low. If we exclude the five points for which merit exceeds 0.7, the correlation drops from −0.33 to −0.30, but remains highly significant ($p < 0.01$). Second, that little or no correlation between merit and advantage strengthens the results. If these two measures were very strongly correlated, then we would be concerned that they are picking up largely the same information and summarising it in the same way. To have two distinct measures of how society is functioning, we want, at most, a weak correlation between the two.
8. The variables in Table 3 have all been standardised to have a mean of 0 and SD of 1, allowing us to compare the magnitude of the effect of a 1 SD change in each variable.
9. There is a large association with the segregation of poverty measure, though this is insignificant due imprecision in the estimate.
10. The exceptions to this are pockets of high inherited advantage in central South Dakota and northern Montana. As Chetty et al. (2014a) note in relation to low mobility, these are areas with large Native American Reservations. They also stand out in terms of high levels of inherited advantage (or disadvantage), though this is unsurprising given the high correlation of mobility and advantage.

Disclosure statement

No potential conflict of interest was reported by the authors.

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Data availability statement

The calibration data derived in this paper are available at https://doi.org/10.5281/zenodo.18098028.

References

Alesina, A., & La Ferrara, E. (2005). Preferences for redistribution in the land of opportunities. *Journal of Public Economics*, *89*(5–6), 897–931. https://doi.org/10.1016/j.jpubeco.2004.05.009

Autor, D. H., & Dorn, D. (2013). The growth of low-skill service jobs and the polarization of the US labor market. *American Economic Review*, *103*(5), 1553–1597. https://doi.org/10.1257/aer.103.5.1553

Bénabou, R., & Ok, E. A. (2001). Social mobility and the demand for redistribution: The POUM hypothesis. *The Quarterly Journal of Economics*, *116*(2), 447–487. https://doi.org/10.1162/00335530151144078

Black, S. E., & Devereux, P. J. (2011). Recent developments in intergenerational mobility. In D. Card & O. Ashenfelter (Eds.), *Handbook of labor economics, Vol. 4B* (pp. 1487–1541). North–Holland.

Cavanaugh, A., & Breau, S. (2018). Locating geographies of inequality: Publication trends across OECD countries. *Regional Studies*, *52*(9), 1225–1236. https://doi.org/10.1080/00343404.2017.1371292

Chetty, R., Hendren, N., Kline, P., & Saez, E. (2014a). Where is the land of opportunity? The geography of intergenerational mobility in the United States. *The Quarterly Journal of Economics*, *129*(4), 1553–1623. https://doi.org/10.1093/qje/qju022

Chetty, R., Hendren, N., Kline, P., Saez, E., & Turner, N. (2014b). Is the United States still a land of opportunity? Recent trends in intergenerational mobility. *American Economic Review*, *104*(5), 141–147. https://doi.org/10.1257/aer.104.5.141

Comerford, D., Rodríguez Mora, J. V., & Watts, M. J. (2022). Meritocracy and the inheritance of advantage. *Journal of Economic Growth*, *27*(2), 235–272. https://doi.org/10.1007/s10887-021-09201-1

Connor, D. S., & Storper, M. (2020). The changing geography of social mobility in the United States. *Proceedings of the National Academy of Sciences*, *117*(48), 30309–30317. https://doi.org/10.1073/pnas.2010222117

Corak, M. (2013). Inequality from generation to generation: The United States in comparison. In R. Rycroft (Ed.), *The economics of inequality, poverty, and discrimination in the twenty-first century* (pp. 107–126). ABC-CLIO.

Durlauf, S. N., Kourtellos, A., & Tan, C. M. (2022). The Great Gatsby Curve. *Annual Review of Economics*, *14*(1), 571–605. https://doi.org/10.1146/annurev-economics-082321-122703

Dworkin, R. (1981). What is equality? Part 2: Equality of resources. *Philosophy & Public Affairs*, *10*(4), 283–345. https://www.jstor.org/stable/2265047

Hammond, G. W., & Thompson, E. (2002). Mobility and modality trends in US state personal income. *Regional Studies*, *36*(4), 375–387. https://doi.org/10.1080/00343400220131142

Hendricks, L., Herrington, C., & Schoellman, T. (2021). College quality and attendance patterns: A long-run view. *American Economic Journal: Macroeconomics*, *13*(1), 184–215. https://doi.org/10.1257/mac.20190154

Kane, K., & Hipp, J. R. (2019). Rising inequality and neighbourhood mixing in US metro areas. *Regional Studies*, *53*(12), 1680–1695. https://doi.org/10.1080/00343404.2019.1603366

Kelly, M. (2000). Inequality and crime. *Review of Economics and Statistics*, *82*(4), 530–539. https://doi.org/10.1162/003465300559028

MacLeavy, J., & Manley, D. (2018). (Re)discovering the lost middle: Intergenerational inheritances and economic inequality in urban and regional research. *Regional Studies*, *52*(10), 1435–1446. https://doi.org/10.1080/00343404.2018.1462487

Merton, R. K. (1938). Social structure and anomie. *American Sociological Review*, *3*(5), 672–682. https://doi.org/10.2307/2084686

MIT Election Data and Science Lab. (2018). *County presidential election returns 2000–2020. Version V12*. Harvard Dataverse. https://doi.org/10.7910/DVN/VOQCHQ.

Piketty, T. (1995). Social mobility and redistributive politics. *The Quarterly Journal of Economics*, *110*(3), 551–584. https://doi.org/10.2307/2946692

Rawls, J. (1971). *A theory of justice*. Belknap.

Roemer, J. E. (2009). *Equality of opportunity*. Harvard University Press.

Segovia, J., & Ramos, R. (2024). Regional intergenerational mobility in Ecuador: Many lands in one country. *Regional Studies*, *58*(11), 2074–2086. https://doi.org/10.1080/00343404.2024.2350611

Tolbert, C. M., & Sizer, M. (1996). *U.S. commuting zones and labor market areas: A 1990 update* (ERS Staff Paper No. 9614). Economic Research Service, Rural Economy Division. 149 pp.

Young, M. (1958). *The rise of meritocracy, 1870–2033*. Thames & Hudson.